

This is a  
**CONTROLLED DOCUMENT**  
EG&G - ROCKY FLATS PLANT  
ENVIRONMENTAL MANAGEMENT  
This is a RED Stamp

ROCKY FLATS PLANT	Manual No	5-21000-OPS-FO
EMD OPERATING	Procedure No	Table of Contents, Rev 14
PROCEDURES MANUAL	Page	1 of 2
	Effective Date	05/22/92
	Organization.	Environmental Management

THIS IS ONE VOLUME OF A SIX VOLUME SET WHICH INCLUDES.

VOLUME I FIELD OPERATIONS (FO)  
VOLUME II GROUNDWATER (GW)  
VOLUME III GEOTECHNICAL (GT)  
VOLUME IV SURFACE WATER (SW)  
VOLUME V ECOLOGY (EE)  
VOLUME VI: AIR (AP)

TABLE OF CONTENTS  
FOR VOLUME I: FIELD OPERATIONS

<u>Procedure No.</u>	<u>Title</u>	<u>Rev. No.</u>	<u>Effective Date</u>
FO 01	Air Monitoring and Dust Control	2	05/12/92
FO 02	Transmittal of Field QA Records	3	05/22/92
FO 03	General Equipment Decontamination	2	05/12/92
FO 04	Heavy Equipment Decontamination	2	05/12/92
DCN 92 01	Clarification of Work Area	1	01/31/92
DCN 92 02	Clarification of Center Bit Decontamination	1	03/12/92
FO 05	Handling of Purge and Development Water	2	05/12/92
FO 06	Handling of Personal Protective Equipment	2	05/12/92
FO 07	Handling of Decontamination Water and Wash Water	2	05/12/92
FO 08	Handling of Drilling Fluids and Cuttings	2	05/12/92
FO 09	Handling of Residual Samples	2	05/12/92
FO 10	Receiving, Labeling, and Handling Environmental Materials Containers	2	05/12/92

ADMIN RECORD

A-514-000-101

REVIEWED FOR CLASSIFICATION/UCM

By [Signature]  
Date May 20, 1992  
[Signature] 5/29/92

**ROCKY FLATS PLANT  
EMD OPERATING  
PROCEDURES MANUAL**

**Manual No.  
Procedure No  
Page  
Effective Date  
Organization:**

**5-21000-OPS-FO  
Table of Contents, Rev 14  
2 of 2  
05/22/92  
Environmental Management**

<b><u>Procedure No.</u></b>	<b><u>Title</u></b>	<b><u>Rev. No.</u></b>	<b><u>Effective Date</u></b>
FO 11	Field Communications	2	05/12/92
FO 12	Decontamination Facility Operations	2	05/12/92
FO 13	Containerization, Preserving, Handling and Shipping of Soil and Water Samples	2	05/12/92
FO 14	Field Data Management	2	05/12/92
FO 15	Photoionization Detectors (PIDs) and Flame Ionization Detectors (FIDs)	2	05/12/92
FO 16	Field Radiological Measurements	2	05/12/92
DCN 92 04	Clarification of Seismic Lines	1	04/13/92
FO 17	Determining Out-Of-Specification Analytical Results for Environmental Samples		To Be Added
FO 18	Environmental Sample Radioactivity Content Screening	2	05/12/92
FO 19	Base Laboratory Work	2	05/12/92

REVIEWED FOR CLASSIFICATION/UCM  
By J. A. [Signature]  
Date May 20, 1992

**AIR MONITORING AND DUST CONTROL**

**EG&G ROCKY FLATS PLANT  
EMD MANUAL OPERATION SOP**

**Manual:  
Procedure No.:  
Page:  
Effective Date:  
Organization:**

**5-21000-OPS  
FO.1, Rev. 2  
1 of 7  
March 1, 1992  
Environmental Management**

**Category 2**

**TITLE  
AIR MONITORING AND  
DUST CONTROL**

**Approved By:**

*[Signature]*  
(Name of Approver)

*5/19/92*  
(Date)

**10 TABLE OF CONTENTS**

10	TABLE OF CONTENTS	1
20	PURPOSE AND SCOPE	2
30	RESPONSIBILITIES AND QUALIFICATIONS	2
40	REFERENCES	2
41	SOURCE REFERENCES	2
50	PREREQUISITES	3
60	PROJECT MANAGER RESPONSIBILITIES	5
61	MEASURE WIND SPEED	5
62	MEASURE SOIL MOISTURE CONTENT	5
63	MEASURE AIRBORNE DUST CONCENTRATIONS	6
64	COLLECTION OF HI-VOL SAMPLES	6

## AIR MONITORING AND DUST CONTROL

---

EG&G ROCKY FLATS PLANT	Manual:	5-21000-OPS
EMD MANUAL OPERATION SOP	Procedure No.:	FO.1, Rev. 2
	Page:	2 of 7
	Effective Date:	March 1, 1992
Category 2	Organization:	Environmental Management

---

### 2.0 PURPOSE AND SCOPE

This standard operating procedure (SOP) contains instructions for air monitoring and dust control and is applicable to the intrusive activities at the 16 Operable Units (OU) at the Rocky Flats Plant (RFP). OUs are defined under the Resource Conservation Recovery Act (RCRA) Facilities Investigation/Remedial Investigation (RFI/RI) activities described in the interagency agreement (IAG). Intrusive activities that fall within the scope of this procedure are those with the potential for producing appreciable quantities of suspended particles that contain potentially hazardous substances (i.e., earth moving and drilling).

### 3.0 RESPONSIBILITIES AND QUALIFICATIONS

All construction personnel must complete 40-hours of Occupational Safety and Health Administration (OSHA)/Superfund Amendment and Reauthorization Act (SARA) training, 24-hours of on-the-job training (OJT), and 8-hours supervisor training (for supervisors only). Personnel are also required to attend any refresher courses.

All personnel are required to have a baseline physical. This physical must be in compliance with RFP standard 29 CFR 1910.120 and the site-specific Health and Safety Plan (H&SP).

### 4.0 REFERENCES

#### 4.1 SOURCE REFERENCES

Hazardous Waste Operations and Emergency Response. CR Title 29, Part 1910.170

DOE Order 5400.1, General Environmental Protection Program November 9, 1988 Revision 1,  
June 29, 1990

## AIR MONITORING AND DUST CONTROL

---

EG&G ROCKY FLATS PLANT	Manual:	5-21000-OPS
EMD MANUAL OPERATION SOP	Procedure No.:	FO.1, Rev. 2
	Page:	3 of 7
	Effective Date:	March 1, 1992
Category 2	Organization:	Environmental Management

---

Reference Method for the Termination of Suspended Particulate Matter in the Atmosphere  
(High Volume Method) CFR Title 40, Part 50, Appendix B

Ambient Air Specific Methods US Environmental Protection Systems, Volume II  
EPA-600/4-77-027a

Fugitive Particles Colorado Air Quality Control Commissions (AQCC) Regulation, Section III

### 50 PREREQUISITES

If site-specific anemometers are required in the OU area, they should be set up prior to the start of any work

The following equipment is required where applicable according to the H&SP

- Hard hats
- Safety shoes or protectors
- Coveralls
- Gloves
- Monitoring equipment (i.e., H-Nu and Ludlum Test equipment)
- Electrical safety gear
- Safety harness for high work
- Eye/Ear protection
- Organic vapor meter with assorted calibration tubes
- 4-Gas monitor (i.e., O<sub>2</sub>/H<sub>2</sub>O/CO/comb)
- Low volume (Lo-Vol)/high volume (Hi-Vol) air samplers (i.e., personal and stationary)
- Air sample scaler counter

## **AIR MONITORING AND DUST CONTROL**

---

<b>EG&amp;G ROCKY FLATS PLANT</b>	<b>Manual:</b>	<b>5-21000-OPS</b>
<b>EMD MANUAL OPERATION SOP</b>	<b>Procedure No.:</b>	<b>FO.1, Rev. 2</b>
	<b>Page:</b>	<b>4 of 7</b>
	<b>Effective Date:</b>	<b>March 1, 1992</b>
<b>Category 2</b>	<b>Organization:</b>	<b>Environmental Management</b>

---

- Portable radiation monitoring equipment
- Explosivity indicator/alarm
- Digital dosimetry
- Radiologic metering source calibration set
- Respirator and cartridges
- Soil moisture measuring device

The following documents are required where applicable according to the site specific work plan:

- Weekly Work Permit
- Excavation Permit(s)
- Subcontractor's Health & Safety Plan
- Approved Construction Schedule
- OSHA and Orientation Training Records
- Records of Physical Examination and Respirator Examination
- Health & Safety Plan (i.e., Project and Site-Specific)
- Welding Permits
- Land Use Permits
- Detailed Statement of Work and Project Work Plan

Hi-Vol and Lo-Vol air samplers are operational and calibrated in accordance with the manufacturer's recommendations prior to start of work. Health & safety plans are approved by the RFP Director of Environmental Management (EM) prior to start of work.

All equipment used for intrusive activities (i.e., drill rigs, support vehicles, and tools) will be inspected for functional operability and safety prior to start of work. Documentation and permits will also be in place at this time. Personal protective equipment (PPE) will be used and air monitoring will be performed in accordance with drilling site H&SP as well as this SOP.

## AIR MONITORING AND DUST CONTROL

---

<b>EG&amp;G ROCKY FLATS PLANT</b>	<b>Manual:</b>	<b>5-21000-OPS</b>
<b>EMD MANUAL OPERATION SOP</b>	<b>Procedure No.:</b>	<b>FO.1, Rev. 2</b>
	<b>Page:</b>	<b>5 of 7</b>
	<b>Effective Date:</b>	<b>March 1, 1992</b>
<b>Category 2</b>	<b>Organization:</b>	<b>Environmental Management</b>

---

### 6.0 PROJECT MANAGER RESPONSIBILITIES

It is the responsibility of the project manager to verify that all prerequisites are completed before beginning the intrusive activities at the OU. This includes verification that Hi-Vol and Lo-Vol air samplers are operational and calibrated before work begins.

#### 6.1 MEASURE WIND SPEED

Anemometers will be placed in a representative area relative to the work site and in a location that does not interfere with site activities.

If the 15-minute average wind speed exceeds 15 mph, as measured by the site-specific anemometer, for two consecutive 15-minute periods for earth moving or other dust generation operations, terminate operations until 15-minute average wind speed is below 15 mph for two consecutive 15-minute periods.

Drilling operations and related investigative activities will be measured by an anemometer located in the construction yard at 881 Hillside. If the 15-minute average wind speed measures above 35 mph, terminate operations until the 15-minute average wind speed is below 35 mph.

Wind speed data will be collected and archived by Air Programs Group personnel. This data will be reported to the project manager on a monthly basis. Due to the nature of the testing, it is important to verify that anemometers are operational prior to start of work.

#### 6.2 MEASURE SOIL MOISTURE CONTENT

Soil moisture content will be measured with a moisture meter for earth moving or dust generation operations (this excludes drilling). If surface soil moisture content measures below

## AIR MONITORING AND DUST CONTROL

---

<b>EG&amp;G ROCKY FLATS PLANT</b>	<b>Manual:</b>	<b>5-21000-OPS</b>
<b>EMD MANUAL OPERATION SOP</b>	<b>Procedure No.:</b>	<b>FO.1, Rev. 2</b>
	<b>Page:</b>	<b>6 of 7</b>
	<b>Effective Date:</b>	<b>March 1, 1992</b>
<b>Category 2</b>	<b>Organization:</b>	<b>Environmental Management</b>

---

seven percent, wet (with water only) the top six inches of soil to prevent dust generation Then, measure the soil moisture content again Soil wetting will be performed in the vicinity of excavation activities and only when analytical soil samples are not affected

The results of soil moisture tests, date, time, and reason for conducting the test will be documented in the project manager's log book

### 6.3 MEASURE AIRBORNE DUST CONCENTRATIONS

The project manager will measure airborne dust concentrations as deemed necessary during dust generating activities At a minimum, airborne dust concentrations will be measured prior to dust generating activities and when there is visible dust during operations

Dust concentrations will be measured using a TSI "Piezoblance" Model 3500 Respirable Aerosol Mass Monitor (Lo-Vol air sampler) real-time instrument (or equivalent)

The results of dust concentration measurements, date, time, and reason for conducting the test will be documented in the project manager's log book Industrial Hygiene may require and will perform additional testing with personal dust monitoring equipment

### 6.4 COLLECTION OF HI-VOL SAMPLES

The project manager may request that Hi-Vol filters be collected off-schedule to respond to health & safety issues If this occurs, the project manager must contact the Radioactive Ambient Air Monitoring Program (RAAMP) manager to have filters collected off-schedule

Date, time, and reason for filters collected off-scheduled will be documented in the project manager's log book Date and time of contact with the RAAMP manager must also be



## AIR MONITORING AND DUST CONTROL

<b>EG&amp;G ROCKY FLATS PLANT</b>	<b>Manual:</b>	<b>5-21000-OPS</b>
<b>EMD MANUAL OPERATION SOP</b>	<b>Procedure No.:</b>	<b>FO.1, Rev. 2</b>
	<b>Page:</b>	<b>7 of 7</b>
	<b>Effective Date:</b>	<b>March 1, 1992</b>
<b>Category 2</b>	<b>Organization:</b>	<b>Environmental Management</b>

documented Hi-Vol air samplers will be operated continuously, 24 hours-a-day, seven days-a-week

**TRANSMITTAL OF FIELD QA RECORDS**

<b>EG&amp;G ROCKY FLATS PLANT</b>	<b>Manual:</b>	<b>5-21000-OPS</b>
<b>EMD FIELD OPERATIONS SOP</b>	<b>Procedure No.:</b>	<b>FO2, Rev. 3</b>
	<b>Page:</b>	<b>1 of 6</b>
	<b>Effective Date:</b>	<b>May 22, 1992</b>
<b>Category 2</b>	<b>Organization:</b>	<b>Environmental Management</b>

**TITLE**  
**TRANSMITTAL OF**  
**FIELD QA RECORDS**

**Approved by**

*[Signature]*  
(Name of Approver)

5/19/92  
(Date)

**1.0 TABLE OF CONTENTS**

10	TABLE OF CONTENTS	1
20	PURPOSE	2
30	SCOPE	2
40	REFERENCES	2
41	SOURCE REFERENCES	2
42	INTERNAL REFERENCES	2
50	PREREQUISITES	3
60	LIMITATIONS AND PROCEDURES	3
70	PROCEDURE	3
80	AUTHENTICATION	6

## TRANSMITTAL OF FIELD QA RECORDS

---

EG&G ROCKY FLATS PLANT	Manual:	5-21000-OPS
EMD FIELD OPERATIONS SOP	Procedure No.:	FO.2, Rev. 3
	Page:	2 of 6
	Effective Date:	May 22, 1992
Category 2	Organization:	Environmental Management

---

### 2.0 PURPOSE

This procedure addresses the disposition of field QA records that have been authenticated as part of the collection of Environmental Management field activities

### 3.0 SCOPE

This procedure is intended for the use of trained personnel in controlled transmission of authenticated QA records to the responsible Project Manager from the field

### 4.0 REFERENCES

#### 4.1 SOURCE REFERENCES

4.1.1 Environmental Restoration Interagency Agreement

4.1.2 DOE Order 5400.1, General Environmental Protection Program

4.1.3 DOE Order 5700.6B Quality Assurance

4.1.4 Environmental Restoration Department Quality Assurance Program Description

#### 4.2 INTERNAL REFERENCES

4.2.1 Environmental Management (EM) Administrative Procedure 3-21000-ADM-16.01, Control of Corrective Action Reports

## TRANSMITTAL OF FIELD QA RECORDS

<b>EG&amp;G ROCKY FLATS PLANT</b>	<b>Manual:</b>	<b>5-21000-OPS</b>
<b>EMD FIELD OPERATIONS SOP</b>	<b>Procedure No.:</b>	<b>FO.2, Rev. 3</b>
	<b>Page:</b>	<b>3 of 6</b>
	<b>Effective Date:</b>	<b>May 22, 1992</b>
<b>Category 2</b>	<b>Organization:</b>	<b>Environmental Management</b>

4 2 2 EM Administrative Procedure 3-21000-ADM-17 01, Record Management

### 5.0 PREREQUISITES

5.1 QA records must be properly completed per the applicable generation procedure

5.2 QA records, such as procedures with internal authentications, must be properly authenticated per the applicable procedure

5.3 Each QA record must have a unique identification number

### 6.0 LIMITATIONS AND PRECAUTIONS

None

### 7.0 PROCEDURE

7 1 Verify that QA records have been properly authenticated per the applicable procedures under which they were generated

7.2 Verify that each QA record has a unique identification number generated in accordance with the procedure which generated the QA record

7.3 If the verification in steps 7 1, 7 2, or 7 5 1 identify discrepancies with the applicable generation procedures, terminate this activity for the affected QA record and prepare a Corrective Action Report

## TRANSMITTAL OF FIELD QA RECORDS

EG&G ROCKY FLATS PLANT	Manual:	5-21000-OPS
EMD FIELD OPERATIONS SOP	Procedure No.:	FO2, Rev 3
	Page:	4 of 6
	Effective Date:	May 22, 1992
Category 2	Organization.	Environmental Management

### NOTE

The QA records identified in Corrective Action reports will be dispositioned in accordance with the EM Administrative Procedure 17 1 (Reference 4.2.1).

- 7 4 Maintain the QA records in a location where they are protected from loss or damage
- 7.5 At least once every seven days, prepare a package of the QA Records accumulated for transmission to the responsible project manager The time period for transmission and the receiver of the transmission specified in the generation procedure takes precedent over the requirements specified above
- 7 5 1 Collect the QA records and review them for accuracy and completeness consistent with the requirements in the applicable generation procedures
- 7 5 2 If QA records are not consistent with the applicable generation procedures (see step 7 5 1), disposition the QA records as described in step 7 3
- 7 5 3 Obtain a Field QA Records Transmission Form (FQT) (FORM FO2.A)
- 7 5 4 Address the form to the responsible Project Manager
- 7 5 5 Record the FQT Number on the form (see Attachment 1)

### NOTE

This number is "FQT", your initials, the date (mmddyy format), and the number of transmission forms you have generated that day, each separated by dashes. (Example: FQT-JWD-053191-1).

## TRANSMITTAL OF FIELD QA RECORDS

**EG&G ROCKY FLATS PLANT  
EMD FIELD OPERATIONS SOP**

**Manual:  
Procedure No.:  
Page:  
Effective Date:  
Organization:**

**5-21000-OPS  
FO.2, Rev. 3  
5 of 6  
May 22, 1992  
Environmental Management**

**Category 2**

**7 5 6** Record the following information on the FQT (continuation sheets maybe used as needed)

**1** Record number,

**2** Title, and

**3** Record's date

**7.5 7** Record the page number and the total number of pages on the FQT form and its continuation pages, if any

**7 5 8** Record the FQT number on the continuation pages, if any

**7 5 9** Attach the QA records listed to the form

**7 5 10** Verify that all QA records listed on the transmission form are attached

**7.5 11** If the QA records were not attached per step 7 5 7 attach them or revise the form

### NOTE

**IF a QA record is lost, a Corrective Action Report shall be created per the EM Administrative Procedure 3-21000-ADM-16.01.**

**7 5 12** Authenticate the transmission form by:

**1** Printing your name,

## TRANSMITTAL OF FIELD QA RECORDS

<b>EG&amp;G ROCKY FLATS PLANT</b>	<b>Manual:</b>	<b>5-21000-OPS</b>
<b>EMD FIELD OPERATIONS SOP</b>	<b>Procedure No.:</b>	<b>FO.2, Rev. 3</b>
	<b>Page:</b>	<b>6 of 6</b>
	<b>Effective Date:</b>	<b>May 22, 1992</b>
<b>Category 2</b>	<b>Organization:</b>	<b>Environmental Management</b>

2 signing, and

3 recording the date

7 5 13 Document the transmission of the QA records, the FQT number, and the means of transmission in the field office's log

7.6 Transmit the transmission form and attachments to the EMD records center (per 3-21000-ADM-17 01, Records Management) with copy to the Project Manager

### NOTE

The EM Department Document Custodian will sign the FQT upon receipt and return a copy of the first page of the signed FQT to the sender.

7 7 Upon receipt of A FQT signed by the Document Custodian, document this is the field office log, include the date signed and the FQT numbers

### 8.0 AUTHENTICATION

Authentication of completion of this procedure is documented by signing the Field Data Transmission Form as described in step 7 5 12

**ATTACHMENT 1**  
**FIELD QA RECORDS TRANSMISSION FORM**

Transmission Form Number FQT- \_\_\_\_\_

Page \_\_\_\_ of \_\_\_\_

To EMD records center.  
Project Manager, and

\_\_\_\_\_  
\_\_\_\_\_

From \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Number	Title	Date
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

**Authentication**

The signature below indicates that the requirements specified in OPS GEN1 2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages

_____	_____	_____
Name (Print)	Signature	Date

**Received By EMD Document Custodian**

_____	_____	_____
Name (Print)	Signature	Date



**ATTACHMENT 2**

**FIELD QA RECORDS TRANSMISSION FORM**  
**ENVIRONMENTAL MONITORING DEPARTMENT**

(Continuation Sheet)

Transmission Form Number FQT-

Page        of       [illegible]

**HANDLING OF RESIDUAL SAMPLES**

<b>EG&amp;G ROCKY FLATS PLANT</b>	<b>Manual:</b>	<b>5-21000-OPS</b>
<b>EMD FIELD PROCEDURES SOP</b>	<b>Procedure No.:</b>	<b>FO.9, Rev. 2</b>
	<b>Page:</b>	<b>1 of 8</b>
	<b>Effective Date:</b>	<b>March 1, 1992</b>
<b>Category 2</b>	<b>Organization:</b>	<b>Environmental Management</b>

**TITLE**  
**HANDLING OF RESIDUAL SAMPLES**

**Approved By**

(Name of Approver)

**5/12/92**

(Date)

**1.0 TABLE OF CONTENTS**

<b>10</b>	<b>TABLE OF CONTENTS</b>	<b>1</b>
<b>20</b>	<b>PURPOSE AND SCOPE</b>	<b>2</b>
<b>30</b>	<b>RESPONSIBILITIES AND QUALIFICATIONS</b>	<b>2</b>
<b>31</b>	<b>SUBCONTRACTORS</b>	<b>2</b>
<b>32</b>	<b>LABORATORY</b>	<b>2</b>
<b>33</b>	<b>EG&amp;G</b>	<b>3</b>
<b>40</b>	<b>REFERENCES</b>	<b>3</b>
<b>41</b>	<b>SOURCE REFERENCES . . . . .</b>	<b>3</b>
<b>42</b>	<b>INTERNAL REFERENCES</b>	<b>3</b>
<b>50</b>	<b>PROCEDURE FOR THE HANDLING OF RESIDUAL SAMPLES</b>	<b>4</b>
<b>51</b>	<b>RECEIVING RESIDUAL LABORATORY SAMPLES</b>	<b>4</b>
<b>52</b>	<b>CHARACTERIZING RESIDUAL LABORATORY SAMPLES</b>	<b>4</b>
<b>53</b>	<b>RECEIVING SAMPLE SHIPMENTS</b>	<b>6</b>
<b>54</b>	<b>DOCUMENT PACKAGE</b>	<b>7</b>
<b>60</b>	<b>DOCUMENTATION . . . . .</b>	<b>8</b>

REVIEWED FOR CLASSIFICATION/UCNI

By Y. H. [Signature]

Date 9/4/92

## HANDLING OF RESIDUAL SAMPLES

**EG&G ROCKY FLATS PLANT  
EMD FIELD PROCEDURES SOP**

**Manual:  
Procedure No.:  
Page:  
Effective Date:  
Organization:**

**5-21000-OPS  
FO.9, Rev. 2  
2 of 8  
March 1, 1992  
Environmental Management**

**Category 2**

### **2.0 PURPOSE AND SCOPE**

This standard operating procedure (SOP) describes the waste management procedures to be implemented at the Rocky Flats Plant (RFP) for the handling of residual laboratory soil samples, and the documentation necessary to be in compliance with the RFP Waste Management Program. This SOP is intended to be sufficiently detailed so that conformance will result in reliable handling of residual laboratory soil samples.

### **3.0 RESPONSIBILITIES AND QUALIFICATIONS**

#### **3.1 SUBCONTRACTORS**

The subcontractor's project manager will be responsible for assigning project staff to implement this SOP and for ensuring that the procedures are followed by all subcontractor personnel.

The assigned onsite sampling manager will have a minimum of a two year college science degree and report to an assigned chemist. The sampling manager will be responsible for all coordination and required documentation as specified in this SOP between the subcontractor, EG&G, and the laboratory.

Personnel using light or heavy equipment, scientific monitoring devices, or operating company vehicles must have appropriate training or licenses.

#### **3.2 LABORATORY**

The laboratory will be responsible for contacting the subcontractor that originally submitted the samples prior to shipping any residual lab soil samples. The laboratory will also be required to

## HANDLING OF RESIDUAL SAMPLES

---

<b>EG&amp;G ROCKY FLATS PLANT</b>	<b>Manual:</b>	<b>5-21000-OPS</b>
<b>EMD FIELD PROCEDURES SOP</b>	<b>Procedure No.:</b>	<b>FO.9, Rev. 2</b>
	<b>Page:</b>	<b>3 of 8</b>
	<b>Effective Date:</b>	<b>March 1, 1992</b>
<b>Category 2</b>	<b>Organization:</b>	<b>Environmental Management</b>

---

provide all documentation, as specified in this SOP, to the subcontractor and ship all laboratory residual soil samples in accordance with all applicable DOT regulations

### 3.3 EG&G

The EG&G project manager has the overall responsibility for implementing this SOP. EG&G will be responsible for approving all Residual Lab Soil Characterization (RLSC) forms and final disposition of all residual laboratory soils.

## 4.0 REFERENCES

### 4.1 SOURCE REFERENCES

The following is a list of references reviewed prior to the writing of this procedure:

A Compendium of Superfund Field Operations Methods EPA/540/P-87/001. December 1987

RCRA Facility Investigation Guidance Interim Final May 1989

### 4.2 INTERNAL REFERENCES

Related SOPs cross-referenced in this SOP are as follows:

- SOP 1 10, Receiving, Labeling, and Handling Waste Containers
- SOP 1 12, Decontamination Facility Operations

## HANDLING OF RESIDUAL SAMPLES

---

EG&G ROCKY FLATS PLANT	Manual:	5-21000-OPS
EMD FIELD PROCEDURES SOP	Procedure No.:	FO.9, Rev. 2
	Page:	4 of 8
	Effective Date:	March 1, 1992
Category 2	Organization:	Environmental Management

---

### 5.0 PROCEDURE FOR THE HANDLING OF RESIDUAL SAMPLES

Residual laboratory soil samples consist of excess soils collected at RFP, that were not used by the chemical laboratory for analyses and are being returned to RFP

The following procedures are guidelines to be followed by the subcontractor for the proper chemical characterization, transport, storage, and containment of residual laboratory soils being returned to RFP by EG&G's contracted chemical laboratories

#### 5.1 RECEIVING RESIDUAL LABORATORY SAMPLES

Chemical laboratories requesting to return residual soil samples will first contact the subcontractor that originally submitted the soil samples to the laboratory. The subcontractor will require all documentation specified in this SOP. The laboratory will provide the subcontractor with the following notification of shipment

- Sample identification list of residual soils to be returned to RFP
- Method of shipment (i.e., courier)
- Expected date and time of delivery
- Number of shipping containers
- Total number of individual sample containers

#### 5.2 CHARACTERIZING RESIDUAL LABORATORY SAMPLES

Once the subcontractor receives all required information from the laboratory, the subcontractor will access the Rocky Flats Data Management System (RFDMS) for the validated chemical results of the associated soil sample. The subcontractor will categorize each soil as radioactive, hazardous

## HANDLING OF RESIDUAL SAMPLES

---

<b>EG&amp;G ROCKY FLATS PLANT</b>	<b>Manual:</b>	<b>5-21000-OPS</b>
<b>EMD FIELD PROCEDURES SOP</b>	<b>Procedure No.:</b>	<b>FO.9, Rev. 2</b>
	<b>Page:</b>	<b>5 of 8</b>
	<b>Effective Date:</b>	<b>March 1, 1992</b>
<b>Category 2</b>	<b>Organization:</b>	<b>Environmental Management</b>

---

(nonradioactive RCRA-regulated hazardous substances), or non-hazardous based upon the chemical results. The chemical categorization will be performed by the subcontractor's assigned sample manager and chemist. All chemical categorizations performed by subcontracting personnel will be based on validated chemical results of the associated soil sample obtained during field sampling activities.

Following the subcontractor's chemical categorization of each residual soil sample to be returned to EG&G, the subcontractor will complete a Residual Lab Soil Characterization (RLSC) Form (Form 19A). This form will identify the name of the subcontractor, the chemical laboratory requesting the return shipment, the date of request, and the RLSC identification (ID) number (sample ID). Included on this form will be the subcontractor's chemical categorization of each soil sample which will be identified as follows:

- Uncontaminated
- Low-level radioactivity contaminated (RAD)
- Nonradioactive RCRA-regulated hazardous (hazardous)
- Mixed (RAD and hazardous)

The subcontractor will also cross-reference the original Chain-of-Custody (COC) number to the residual soil sample and record that COC number on the spaces provided on the RLSC Form.

The RLSC form(s) and associated chemical results will be submitted to EG&G for final characterization and approval of acceptance of the residual laboratory soil samples. Following EG&G's waste characterization and approval, the RLSC Form and associated chemical analyses will be returned to the subcontractor. The subcontractor will authorize the chemical laboratory to proceed with the return shipment of the designated residual laboratory soils to RFP.

## HANDLING OF RESIDUAL SAMPLES

---

<b>EG&amp;G ROCKY FLATS PLANT</b>	<b>Manual:</b>	<b>5-21000-OPS</b>
<b>EMD FIELD PROCEDURES SOP</b>	<b>Procedure No.:</b>	<b>FO.9, Rev. 2</b>
	<b>Page:</b>	<b>6 of 8</b>
	<b>Effective Date:</b>	<b>March 1, 1992</b>
<b>Category 2</b>	<b>Organization:</b>	<b>Environmental Management</b>

---

### 5.3 RECEIVING SAMPLE SHIPMENTS

The laboratory will address the residual laboratory soils to the subcontractor at RFP. The samples will be shipped in accordance with all applicable Department of Transportation (DOT) shipping regulations. The laboratory will also provide duplicate copies of the associated COC form(s) pertaining to the residual laboratory soils. The duplicate copies of the COC forms are to be securely placed on the outside of the shipping container(s) and well protected from the weather.

When the designated residual soil samples are received by EG&G's Shipping and Receiving Department, the subcontractor will be notified of the shipment. The subcontractor will transport the unopened sample container(s) (coolers or packages) to the main decontamination facility. At the main decontamination facility, the subcontractor will open the sample cooler(s) in accordance with the Environmental Restoration's Project Health and Safety Plan. The subcontractor will inspect the contents in each sample container, assess damage, and ensure that all individual sample containers are listed on the accompanied COC form.

Samples identified on the COC by the subcontractor that cannot be accounted for will be lined-out, dated, and initialed on both COC copies. This discrepancy will be documented on the COC forms and the laboratory will be notified.

If containers are inventoried by the subcontractor during inspection and are not listed on the COC forms, the subcontractor will separate the non-listed sample container(s) and contact the laboratory and EG&G for further guidance.

If a sample container is found to be broken, the sample manager will check the EG&G characterization of the contents of the container. If the contents are characterized as uncontaminated, the sample will be left in the shipment container. If the soils within the broken

## HANDLING OF RESIDUAL SAMPLES

---

<b>EG&amp;G ROCKY FLATS PLANT EMD FIELD PROCEDURES SOP</b>	<b>Manual:</b>	<b>5-21000-OPS</b>
	<b>Procedure No.:</b>	<b>FO.9, Rev. 2</b>
	<b>Page:</b>	<b>7 of 8</b>
	<b>Effective Date:</b>	<b>March 1, 1992</b>
<b>Category 2</b>	<b>Organization:</b>	<b>Environmental Management</b>

---

sample container are characterized as RAD, hazardous, or mixed, the sample manager will contact the EG&G project manager for further guidance

If the sample containers are undamaged, the subcontractor will segregate each sample container based on the EG&G characterization of the sample. Sample containers having the same characterization will be repackaged together. Each new package will be labeled according to the characterization of samples. Packages containing samples characterized as RAD will be labeled with a "White I" radioactive label. Packages containing samples characterized as hazardous or mixed will be labeled with a Department of Transportation (DOT) "Other Regulated Materials Class E" (ORM-E) sticker. Additionally, packages containing mixed residual samples will be marked with the word "RAD" (See SOP 1 10, Receiving, Labeling, and Handling Waste Containers for details pertaining to the proper handling of waste containers.)

The subcontractor will then place the repackaged samples at the drum transfer area at the main decontamination facility (see SOP 1 12, Decontamination Facility Operations). The subcontractor will have EG&G's Waste Operations personnel sign both copies of the COC forms. Custody of the residual soil samples is now considered officially transferred to EG&G.

The subcontractor will relinquish one copy of the COC form(s) to EG&G's Waste Operations personnel. The subcontractor will retain the duplicate COC form(s) to complete the subcontractor's document package that will ensure that residual soils were appropriately handled and returned to RFP.

### 5.4 DOCUMENT PACKAGE

The subcontractors' document package for residual laboratory samples returned to EG&G's custody will contain the following information for each shipment:



## HANDLING OF RESIDUAL SAMPLES

<b>EG&amp;G ROCKY FLATS PLANT</b>	<b>Manual:</b>	<b>5-21000-OPS</b>
<b>EMD FIELD PROCEDURES SOP</b>	<b>Procedure No.:</b>	<b>FO.9, Rev. 2</b>
	<b>Page:</b>	<b>8 of 8</b>
	<b>Effective Date:</b>	<b>March 1, 1992</b>
<b>Category 2</b>	<b>Organization:</b>	<b>Environmental Management</b>

- An EG&G signed copy of the COC form(s)
- A copy of the completed RLSC form(s) and associated chemical analyses
- Laboratory notification of shipment

These document packages are to be filed in the subcontractor's project QA files and kept until requested by EG&G for permanent storage.

### 6.0 DOCUMENTATION

Information requested by this SOP will be documented on the RLSC (Form FO 9A) form(s) and the COC(s)

**RESIDUAL LAB SOIL CHARACTERIZATION FORM  
(RLSC)****ATTACH CHEMICAL RESULTS OF ASSOCIATED SAMPLES**

**THIS PORTION WILL BE COMPLETED BY THE SUBCONTRACTOR  
AND APPROVED BY EG&G**

Name of Subcontractor \_\_\_\_\_

Name of Chemical Laboratory \_\_\_\_\_

Date of Request \_\_\_\_\_

Are Associated Chemical Results Attached? (Y/N) \_\_\_\_\_

**Subcontractor's Signature** \_\_\_\_\_

Date \_\_\_\_\_

---

**Comments**

EG&G Project Manager  
Residual Lab Soil Characterization

[illegible]

**Comments** \_\_\_\_\_

**EG&G Approval Signature** \_\_\_\_\_

Date \_\_\_\_\_

This is a  
**CONTROLLED DOCUMENT**

EG&G - ROCKY FLATS PLANT  
ENVIRONMENTAL MANAGEMENT

This is a RED Stamp

**BASE LABORATORY WORK**

<b>EG&amp;G ROCKY FLATS PLANT</b>	<b>Manual:</b>	<b>5-21000-OPS</b>
<b>EMD MANUAL OPERATION SOP</b>	<b>Procedure No.:</b>	<b>FO.19, Rev. 2</b>
	<b>Page:</b>	<b>1 of 6</b>
	<b>Effective Date</b>	<b>March 1, 1992</b>
<b>Category 2</b>	<b>Organization:</b>	<b>Environmental Management</b>

**TITLE**  
**BASE LABORATORY WORK**

**Approved By**

(Name of Approver)

**5/12/92**  
(Date)

**1.0 TABLE OF CONTENTS**

<b>1 0</b>	<b>TABLE OF CONTENTS</b>	<b>1</b>
<b>2 0</b>	<b>PURPOSE AND SCOPE</b>	<b>2</b>
<b>3 0</b>	<b>RESPONSIBILITIES AND QUALIFICATIONS</b>	<b>2</b>
<b>4 0</b>	<b>REFERENCES</b>	<b>3</b>
<b>4 1</b>	<b>SOURCE REFERENCES</b>	<b>3</b>
<b>4 2</b>	<b>INTERNAL REFERENCES</b>	<b>3</b>
<b>5 0</b>	<b>METHODS</b>	<b>4</b>
<b>5 1</b>	<b>PRE-FIELD ACTIVITIES</b>	<b>4</b>
<b>5 2</b>	<b>BASE LABORATORY ACTIVITIES</b>	<b>5</b>
<b>5 3</b>	<b>POST-FIELD ACTIVITIES</b>	<b>5</b>

## BASE LABORATORY WORK

---

<b>EG&amp;G ROCKY FLATS PLANT</b>	<b>Manual:</b>	<b>5-21000-OPS</b>
<b>EMD MANUAL OPERATION SOP</b>	<b>Procedure No.:</b>	<b>FO.19, Rev. 2</b>
	<b>Page:</b>	<b>2 of 6</b>
	<b>Effective Date</b>	<b>March 1, 1992</b>
<b>Category 2</b>	<b>Organization:</b>	<b>Environmental Management</b>

---

### 2.0 PURPOSE AND SCOPE

The purpose of this standard operating procedure (SOP) is to define procedures routinely performed at a base laboratory at the Rocky Flats Plant (RFP). The goal of the base laboratory is to obtain and document data in order to meet acceptable standards of accuracy, precision, comparability, representativeness, and completeness. This document is intended to provide details so that all personnel perform base lab tasks consistently.

The base lab is to be located in an area designated by the EG&G project manager. This facility will be utilized by the contracting party for activities described, but not limited to those listed as follows:

- As a staging area for personnel sampling activities
- As a storage and preparation area for sample containers and to compile sample sets
- As a receiving, preparation, and shipping area for samples collected in the field
- For equipment calibration and secure storage

### 3.0 RESPONSIBILITIES AND QUALIFICATIONS

Only qualified personnel will be allowed to perform these procedures. Required qualifications vary depending on the activity to be performed. In general, qualifications are based on education, previous experience, on-the-job training, and supervision by qualified personnel. Personnel will be geologists, chemists, hydrologists, environmental scientists, engineers, or field technicians with an appropriate amount of applicable experience or on-the-job training under supervision of another qualified person.

## BASE LABORATORY WORK

EG&G ROCKY FLATS PLANT	Manual:	5-21000-OPS
EMD MANUAL OPERATION SOP	Procedure No.:	FO.19, Rev. 2
	Page:	3 of 6
	Effective Date	March 1, 1992
Category 2	Organization:	Environmental Management

### 4.0 REFERENCES

#### 4.1 SOURCE REFERENCES

The following is a list of references reviewed prior to the writing of this procedure

A Compendium of Superfund Field Operations Methods EPA/540/P-87/001 December 1987

Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA Interim Final October 1988

RCRA Facility Investigation Guidance Interim Final May 1989.

Standard Methods for the Examination of Water and Wastewater 17th Edition 1989, et seq APHA-AWWA-WPCF

#### 4.2 INTERNAL REFERENCES

Related SOPs cross-referenced by this SOP are

- SOP FO 6, Handling of Personal Protective Equipment
- SOP FO 7, Handling of Decontamination Water and Wash Water
- SOP FO 10, Receiving, Labeling, and Handling Environmental Materials Containers
- SOP FO 13, Containerizing, Preserving, Handling, and Shipping of Soil and Water Samples
- SOP FO 14, Field Data Management

## BASE LABORATORY WORK

---

EG&G ROCKY FLATS PLANT	Manual:	5-21000-OPS
EMD MANUAL OPERATION SOP	Procedure No.:	FO.19, Rev. 2
	Page:	4 of 6
	Effective Date	March 1, 1992
Category 2	Organization:	Environmental Management

---

- SOP SW 2, Field Measurement of Surface Water Field Parameters

### 5.0 METHODS

Base lab procedures will be performed as described in the following subsections. The order in which tasks are performed may vary depending on time requirements or other day-to-day events.

#### 5.1 PRE-FIELD ACTIVITIES

Provisions will be made at the base lab for an area where personnel may change from their street clothes into field clothing appropriate to the season. No personal protective equipment (PPE), clean or otherwise, will be worn in these areas.

Equipment used for field measurement of field parameters will be calibrated and/or standardized before use by designated personnel in accordance with applicable SOPs. An area of the base lab facilities will be dedicated for this purpose.

Coolers or other containers for transporting sample containers, prelabeled and identified by the sample manager, will be assembled for use by field personnel. Coolers or other containers will be stocked with the sample containers needed for the day's sampling activities. The sample manager will ensure that preservatives are provided for those samples requiring preservation. Glass containers will be placed into the coolers or other containers in such a manner as to prevent breakage while being transported to and from the sampling site(s).

Field crews will be responsible for the inventory of sampling supplies and equipment in the field vehicles and ensuring that necessary items are on hand to complete the day's

## BASE LABORATORY WORK

---

EG&G ROCKY FLATS PLANT	Manual:	5-21000-OPS
EMD MANUAL OPERATION SOP	Procedure No.:	FO.19, Rev. 2
	Page:	5 of 6
	Effective Date	March 1, 1992
Category 2	Organization:	Environmental Management

---

activities prior to leaving the base lab. They will report the status of quantities of supplies in storage at the base lab to the site manager and/or equipment manager in time to reorder and receive items before the stock is depleted.

Each field team leader will ensure that field folders pertaining to the day's activities are obtained from the base lab office files and, if necessary, that security personnel or other concerned personnel are notified of the day's intended activities.

### 5.2 BASE LABORATORY ACTIVITIES

The site manager will assign personnel responsible for proper pre-use calibration and post-use standardization practices. An adequate supply of all standards and solutions will be maintained and records of calibration/standardization activities will be filed in a secured area at the base lab office.

The sample manager will interface with the contracted chemical laboratories and provide control of sample containers, field samples, and related activities in accordance with SOP FO 13, Containerizing, Preserving, Handling, and Shipping of Soil and Water Samples.

The sample manager will utilize available time while teams are in the field to prepare solutions and supplies for the following day's activities.

### 5.3 POST-FIELD ACTIVITIES

Crews returning to the base lab from field sampling activities will deliver radiation screening samples to the on-site laboratory or sample manager.

## BASE LABORATORY WORK

---

<b>EG&amp;G ROCKY FLATS PLANT</b>	<b>Manual:</b>	<b>5-21000-OPS</b>
<b>EMD MANUAL OPERATION SOP</b>	<b>Procedure No.:</b>	<b>FO.19, Rev. 2</b>
	<b>Page:</b>	<b>6 of 6</b>
	<b>Effective Date</b>	<b>March 1, 1992</b>
<b>Category 2</b>	<b>Organization:</b>	<b>Environmental Management</b>

---

Contact with the sample manager will be made immediately upon arrival at the base lab, and samples transferred to his/her custody. One member of the delivering field crew will assist the sample manager in preparing the samples for storage and/or shipment.

A designated person will perform post-use instrument calibration/standardization procedures according to applicable SOPs. Instruments will be stored in a locked room when field or base lab personnel are not present.

Data forms not completed in the field will be completed after each day's activities. Forms will be completed in accordance with SOP FO 14, Field Data Management.

Field personnel will remove refuse from the vehicles and properly dispose of it in accordance with SOP FO.6, Handling of Personal Protective Equipment, SOP FO 7, Handling of Decontamination Water and Wash Water, and SOP FO 10, Receiving, Labeling, and Handling Environmental Materials Containers.

The base lab facilities will remain locked when project personnel are not present. The last person out is responsible for ensuring that all accesses to the facility are properly secured (that is, locked) before leaving at the end of the workday.